Reg. No: ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year I Semester Supplementary Examinations August-2021
ELECTRICAL CIRCUITS-II
(Electrical and Electronics Engineering)

Time: 3 hours   Max. Marks: 60

PART-A
(Answer all the Questions 5 x 2 = 10 Marks)

1	a	Write the voltage and current relationship in Delta connected system.	2M
	b	What is the transient response of RL series circuit with dc excitation?	2M
	c	Define duality.	2M
	d	Write the generalized equations for Y-Parameters.	2M
	e	Define Transfer function.	2M

PART-B
(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2	a	Explain active power measurement in balanced three phase load system.	5M
	b	Derive the relationship between Phase and Line voltages, currents in delta connected load.	5M

OR

3 A 400V, 3-ϕ supply feeds an unbalanced 3 wire star connected 3 wire, star connected load. The branch impedances of the load are $Z_R=(4+j8)\Omega$, $Z_Y=(3+j4)\Omega$, $Z_B=(5+j20)\Omega$. Find the line currents and voltages across phase impedance. Assume RYB phase sequence.   **10M**
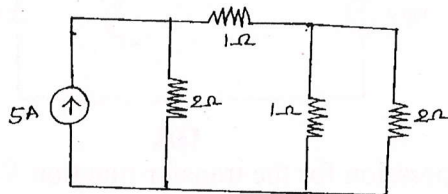
UNIT-II

|			
4	a	Derive the transient response of an RL circuit with dc excitation.	5M
	b	Derive the transient response of an RC circuit with dc excitation.	5M

OR

5 A series RC circuit consists of resistor of 10 and capacitor of 0.1F has .a constant voltage of 20v is applied to the circuit at t=0.obtain the current equation. Determine the voltage across the resistor and the capacitor.   **10M**

UNIT-III
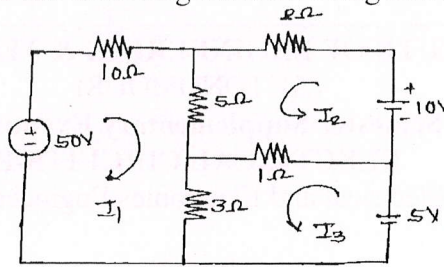
6 a Find the cutset matrix for the following?   **5M**

b Find the cutset matrix for the following?   **5M**
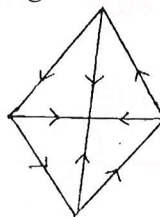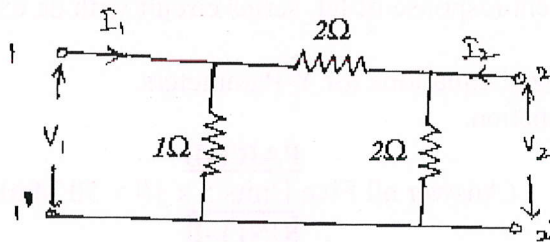

OR

7 Determine mesh currents for the following network using network topology. **10M**

UNIT-IV

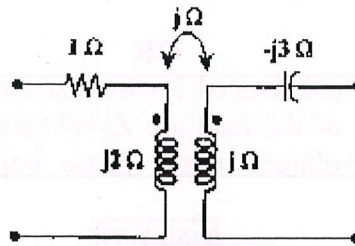8 Find the Z - parameters for the resistance network shown in figure. **10M**

OR

9 Obtain the T parameters of the following two port network. **10M**
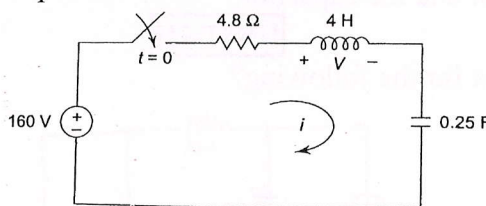

UNIT-V

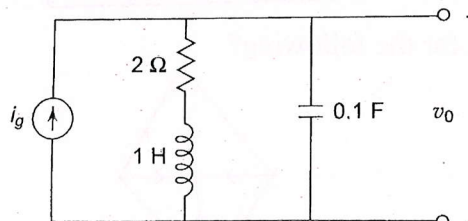10 The energy stored in the circuit shown is zero at the time when the switch is closed. **10M**
    (A) find the s- domain expression for I
    (B) find the time domain expression for i when $t > 0$.
    (C) find the s- domain expression for V.
    (D) find the time domain expression for v when $t > 0$.

OR

11 Derive the numerical expression for the transfer function V_o / I_g for the circuit shown. **10M**

END